

## NOTES FROM THE BOTANIC GARDENS, SYDNEY.

No.16.

By J. H. MAIDEN AND E. BETCHE.

## TILIACEÆ.

## ELEOCHARPUS HOLOPETALUS F.V.M.

Guy Fawkes(J. L. Boorman; December, 1909).

Common in the southern parts of New South Wales, but not recorded from north of the Blue Mountains, so far as we know. Mr. Boorman writes that it is fairly common at Guy Fawkes. It attains a height of 30 to 40 feet near the coast, at the foot of the ranges, and dwindles down to a handsome shrub of 3 to 6 feet at the summit of the ranges around Guy Fawkes, Armidale district.

## RUTACEÆ.

## ZIERIA ROBUSTA, n.sp.

East of Mt. Werong, 3,700 feet high, on the edge of "The Big Plain" overlooking the Kowmung River (R. H. Cambage, No.2261; October, 1909).

An erect compact shrub with erect branches, about 12-18 inches high, quite glabrous and densely covered with glandular tubercles very prominent on the young shoots and petioles. Leaves opposite, trifoliate, the common petiole about  $\frac{1}{4}$  inch long; leaflets obovate, about  $\frac{1}{2}$  inch long, generally with a minute recurved point and with slightly irregularly crenate margins, the glands chiefly prominent on the midrib. Flowers small, white, almost concealed amongst the leaves, in short trichotomous cymes about as long as the leaves, with small bracts. Calyx-lobes triangular, densely tomentose inside, petals imbricate in the bud, minutely puberulent about twice as long as the calyx, the whole

flower hardly above  $\frac{1}{8}$  inch long. Anthers obtuse, not apiculate. Fruits not seen.

Frutex erectus compactusque, 12-18" altus, glaber et glandulosis tuberculis dense tectus. Foliis trifoliatis, foliolis obovatis 5-7 mm. longis, petiolo communi circiter 5 mm. longo. Floribus minutissimis in trichotomis cymis parvis, bracteis circiter aequae longis quam foliis et saepe fere obscuratis sub foliis, toto flore vix 4 mm. longo. Calycis lobis tomentosis, antheris non apiculatis. Fructus non vidimus.

The new species can hardly be said to be closely allied to any described species; its chief characteristic is its robust habit, more like an *Eriostemon* than a *Zieria*. It comes perhaps nearest *Z. cytisoides* and *Z. obcordata*, but it differs essentially from both in the inflorescence and the absence of hairs; the tubercular glands it has in common with *Z. granulata* and some forms of *Z. Smithii*, but hardly anything else, except the generic characters.

ASTEROLASIA CORREIFOLIA Benth., var. MUELLERI F.V.M.

(*A. Muellerei* Benth.).

Mt. Lindsay, Nandewar Range (R. H. Cambage; November, 1909).

The most northern locality recorded. It was recorded from Victoria alone till the first New South Wales specimen was collected, in 1900, at Lobb's Hole, in the Tumut district. The second New South Wales locality brings its range to several hundred miles further north.

PHEBALIUM NOTTII F.V.M.

Upper Copmanhurst (J. L. Boorman; October, 1909).

Originally described from Queensland specimens, but recorded by us, in 1898, as a New South Wales plant, from specimens collected in the Harvey Range, near Peak Hill. The Copmanhurst specimens have generally six or seven petals and calyx-lobes; and are also, in other respects, closer to the typical Queensland specimens than to those from the Harvey Range. They grow in rough sandstone country, at an altitude of 1000 or 2000 feet, and are about  $2\frac{1}{2}$  to 3 feet high.

## LEGUMINOSÆ.

*PHASEOLUS TRUXILLENIS* H. B., & K. New for New South Wales.

Gloucester(W. Heron; February, 1910); Copmanhurst(Rev. H. M. R. Rupp; February, 1910).

Previously recorded, in Australia, only from Queensland and North Australia. It is undoubtedly wild in New South Wales, and not merely a garden-escape. The Rev. H. M. R. Rupp writes:—"It is quite common in this district, and is known here as 'Shell Pea,' yet one does not very often notice it, for it seems to be a shy bloomer. It is a beautiful thing when well out. It always occurs in open or lightly timbered country." Mr. Heron also replied that he found it about 13 miles north-east of Gloucester, far removed from all habitations.

*PULTENÆA SETULOSA* Benth. New for New South Wales.

Mt. Lindsay, Nandewar Range(R. H. Cambage; November, 1909).

Previously recorded only from Queensland. Broad Sound is the only locality given in Bentham's "Flora Australiensis" and in Bailey's "Queensland Flora." The New South Wales specimens are erect shrubs, about 4 feet high, growing at an altitude of from 4,500 to 4,700 feet, and seem to differ from the type only in the less conspicuous setæ on the stipules, the character from which the specific name *setulosa* is derived.

*PULTENÆA FOLIOLOSA* A. Cunn. New for Queensland.

Texas, Queensland(J. L. Boorman; September, 1910). The most northern locality of a plant common on the New England Tableland in New South Wales, but not previously recorded from Queensland.

*EUTAXIA EMPETRIFOLIA* Schlecht. New for Queensland.

Inglewood, Queensland(J. L. Boorman; September, 1910).

The species is common in Southern New South Wales and Victoria, but has not previously been recorded from Queensland, and not even from Northern New South Wales, as far as we know.

The Queensland specimens are, in aspect, very different from the divaricate, thorny-branched shrubs of the Wyong district in New South Wales, for example; and differ from Bentham's description in the glabrous ovarium, but in no other essential character. Some may regard it as a distinct species, but Bentham includes such a variety of forms in *Eutaxia empetrifolia*, that we feel justified in including also this form under that name.

CROTALARIA JUNCEA Linn. New for New South Wales.

Gordon Brook, Upper Copmanhurst (Rev. H. M. R. Rupp; April, 1910).

A common East Indian species, and a well-known fibre-plant. Previously recorded in Australia only from Queensland and North Australia. The Rev. H. M. R. Rupp writes:—"The only place where I have seen it, is on the south side of the Clarence, almost directly opposite Gordon Brook homestead; it grows there freely, reaching 2 feet 6 inches or 3 feet, but mostly shorter."

JACKSONIA SCOPARIA R.Br., var. GONOCLEADA, n.var.

Nambucca Heads, on stony ridges overlooking the ocean (J. L. Boorman; June, 1910).

An erect shrub, 4 to 6 feet high, very densely branched towards the summit. Branchlets angular and narrowly winged, about  $\frac{1}{8}$  inch broad, grey from a minute hoary pubescence. Flowers from pale to orange-yellow.

The shrub looks very different from the ordinary form of *J. scoparia*, but does not differ in any essential floral characters. It flowers apparently much more scantily, and the flowers are on shorter pedicels, but the shape, proportionate length and indumentum of calyx, petals, stipes, ovarium and style are identical, and, therefore, we do not feel justified in separating it specifically from *J. scoparia*. The flattened branchlets approach *J. Clarkii* F.v.M., but that species is distinguished from *J. scoparia* by essential floral characters. We have not seen fruits.

## COMPOSITÆ.

HELICHRYSUM CASSINOIDES Benth.    New for New South Wales.

Gunnedah(J. L. Boorman; November, 1910).

Previously recorded from Queensland only, "Keppel Bay and Broad Sound"(collected by Robert Brown); also from "Gainsford"(collected by E. Bowman, Nat. Herb., Melbourne).

It is a shrub, generally 4 to 6 feet high, exceptionally attaining a height of 10 feet or more; and was found in stony places, near the Black Jack Coal Mine, at Gunnedah.

## STYLIDIEÆ.

LEVENHOOKIA DUBIA Sond.

Hawkesbury Agricultural College, Richmond; plentiful in a paddock on the College Farm(C. T. Musson; October, 1903).

New for the County of Cumberland; not recorded in Rev. Dr. Woolls' "Plants indigenous in the Neighbourhood of Sydney."

## EPACRIDÆ.

EPACRIS MUCRONULATA R.Br.

In these Proceedings for 1898(Vol. xxiii., p.13) we recorded the above species as new for New South Wales. Prof. Ewart has pointed out to us that he has determined the plant as *E. paludosa*, R. Br., and we consider that his view is the correct one. It is an alpine form of *E. paludosa*, different in appearance from the form so common on the Blue Mountains, but still not specifically different. We, therefore, withdraw the name of *Epacris mucronulata* from the flora of New South Wales.

## LABIATÆ.

WESTRINGIA CHEELII, n.sp.

Road from Goonoo to Mudgee(J. L. Boorman; October, 1908).

A thickly branched, pale green shrub, 4 to 5 feet high and nearly as broad, nearly glabrous but with a minute hoary tomentum on the young shoots, distinctly visible on the contracted internodes on the tops of the branches. Leaves almost sessile in

whorls of 3, oblong-elliptical to lanceolate, acute, about  $\frac{1}{4}$  inch long, the margins thickened and slightly recurved, glabrous when full grown, slightly hoary-tomentose on the underside when young. Flowers rather small, the corolla hardly above twice as long as the calyx, of a purplish-blue or sometimes white faintly tinted with pink, axillary, but all crowded at the ends of the branches, forming leafy terminal heads. Calyx green and glabrous, nearly  $\frac{1}{4}$  inch long, with a ribbed tube and short, broad but acute lobes hardly  $\frac{1}{4}$  the length of the tube, the bracts under the calyx very small. Corolla slightly hairy inside and outside; other floral characters those of the genus. Ripe fruits not seen.

Frutex densus circiter vel plus 1 m. altus, fere glaber præter tomentum minutissimum ramis juvenilibus et latere inferiore foliis juvenilibus. Foliis fere sessilibus, ternis, oblongo-ellipticis vel lanceolatis, acutis, circiter 5 mm. longis, marginibus densatis et aliquanto recurvatis. Floribus axillaribus sed apice ramorum confertis in capitibus fere terminalibus. Calyce viridi glabro, bracteis minutissimis sub apice, tubulo costato circiter 4 mm. longo, lobis latis acutisque circiter 1 mm longis. Corolla aliquanto pilosa.

The shrub grows abundantly and gregariously on slightly elevated ridges on the plains between Goonoo and Mudgee. It is not an attractive plant from an horticultural point of view; the flowers are not very conspicuous, and the foliage is of a dull pale green, often shading to purplish on the young shoots, according to the collector's notes.

Bentham writes in the "Flora Australiensis," in a footnote to the genus:—"With the exception of *W. cephalantha*, the species are so closely allied, and run so much into each other as to render it exceedingly difficult to assign to them any tangible characters." We find this remark very true, and it is difficult, for that reason, to say to which of the described species our new species is most nearly allied. It has the short calyx-lobes and very short bracts of *W. rigida* R.Br., and has also the whorls in 3's in common with that species, but it differs from it in the glabrous calyx, and widely in habit and inflorescence. In habit and inflorescence

it comes nearest to the Tasmanian *W. rubicefolia* R.Br., but differs from it in the short calyx-lobes and in the shape, arrangement and the colour of the leaves. It cannot be tacked on as a variety to any described species, as it is as much distinguished from any of them as they are from each other. The chief characteristic is the inflorescence, which comes nearest to the capitate inflorescence of *W. cephalantha* F.v.M., without being truly capitate.

We name the plant in honour of Mr. Edwin Cheel, a co-worker on the Australian flora. Mr. Cheel also diagnosed this plant and we made use of his notes to some extent in this paper.

#### PROSTANTHERA LEICHHARDTII Benth.

Cobar (E. C. Andrews; November, 1910).

Previously recorded from Queensland only, "Bottle Tree Creek, Leichhardt," being the only locality recorded by Bentham, and later still by Bailey.

The specimen was determined by Archdeacon Haviland, and presented to the National Herbarium by the collector.

#### MONIMIACEÆ.

##### PALMERIA SCANDENS F.v.M.

Coff's Harbour (J. L. Boorman; May, 1909); Acacia Creek, Macpherson Range (W. Dunn; May, 1909, and May, 1910).

The fruits of this tall woody climber are incorrectly described; the drupes are supposed to be completely enclosed in the enlarged somewhat fleshy fruiting calyx. This is not the case in the fully matured fruits, as the fruiting specimens from the above two localities show. The fruiting calyx finally bursts irregularly, and expands into a flat, very much lacerated disk bearing 2 to 6 sessile dark drupes on its surface, much as in *Tetrasynandra* (*Kibara* Endl.), only the disk is much larger and more conspicuous, and the drupes are smaller.

#### LAURACEÆ.

##### CRYPTOCARYA ERYTHROXYLON Maiden & Betche.

Gloucester district (W. Heron; November, 1909).

The species was described in Maiden's "Forest Flora of New South Wales," Part xxvi., No. 96, Plate 100(1907), from specimens collected on the Macpherson Range. It is a tall tree in the northern locality, attaining 4 feet in diameter, but seems to be much smaller in the Gloucester district. This new locality extends its range several hundred miles. Mr. Heron writes:—"It is scarce here, and is about 12 inches at most in diameter, and up to 20 feet high."

#### PROTEACEÆ.

EMBOTHRIUM WICKHAMI F.V.M., var. PINNATA, n.var.

Dorrigo(J. L. Boorman; December, 1909).

This interesting Proteaceous tree is common in North Queensland, on the Bellenden-Ker Range and on the Barron River, but has not been found in Southern Queensland, as far as we know; and now it turns up again in Northern New South Wales, in a very restricted area, in a different form. Mr. Boorman informs us that he did not see more than about a dozen trees in a radius of 12 miles of the Dorrigo township, and that it seems not to grow anywhere else in the district. It is a true brush-tree, growing in company with *Araucaria*, *Dysoxylon*, *Harpullia*, etc., attaining a height of 60 to 80 feet, by about 5 feet diameter. The flowers and fruits are quite identical with the Bellenden-Ker specimens, but the leaves are pinnate in the New South Wales specimens, and simple in the Queensland ones. Such a sharp distinction would justify us in giving it a new name if it belonged to any other Family, but the variability of the leaves is so marvellous in Proteaceæ, that we can only regard it as a pinnate-leaved form. The leaves are from 9 to 18 inches long, including the slender petiole, pinnate with 7 to 9 leaflets; leaflets lanceolate, generally 4 to 5 inches long, and  $\frac{3}{4}$  to 1 inch broad in the middle, tapering at both ends, pinnately obliquely veined, only the principal veins conspicuous. The rhachis between the leaflets is in most leaves slightly winged towards the top, frequently uniting the three uppermost leaflets at the base, and thus showing a tendency to relapse into a pinnatifid leaf. This tendency is dis-

tinctly shown in the floral leaves; the first leaves below the inflorescence are frequently simple, next to the simple leaf follows occasionally a leaf cleft to or nearly to the rhachis into two lobes, and then follow, generally abruptly, the pinnate leaves.

Mr. Boorman distinguishes two forms growing together in the same restricted area; one is the tall tree described above, the other is a small shrubby form 10 to 15 feet high, with considerably smaller leaves, and a greater tendency to simple or lobed leaves. The specimens look very distinct, but this is again merely an instance of the protean character of Proteaceæ; the small form will eventually grow out into the tall form, and only tall old trees seem to have the large pinnate leaves. The tree is of special interest because it is one of the few links which connect the flora of Australia with that of South America.

#### HYDROCHARITACEÆ.

*THALASSIA HEMPRICHI*(Ehrenb.) Aschers. New for Australia.

Murray Island, Torres Straits(Charles Hedley; September, 1907; and J. S. Bruce; June, 1910).

Previously recorded from the Indian and Pacific Oceans, from the Red Sea to the shores of New Caledonia and New Britain (Neu Pommern).

In these Proceedings for 1909(Vol. xxxiv., p.585) we published a note on the fruit of a marine plant doubtfully referred to *Cymodocea ciliata*. This is the plant in question; the better specimens received through the goodness of Mr. J. S. Bruce, of Murray Island, by the kind intermediary of Mr. Hedley, enable us to correct the mistake. We regret that, by an oversight, the mark of interrogation was omitted on the Plate on which the fruit is figured as *Cymodocea*, though the query was not omitted from the note.

Together with the specimens of *Thalassia*, Mr. Bruce sent excellent fruiting specimens of *Enhalus Koenigii* Rich.,(*Enhalus acoroides* Steud.) a genus closely allied to *Thalassia*, but distinguished from it chiefly by the long stalks of the fruits, which ripen on the surface of the water. Both genera seem to be

equally common in Torres Straits. Mr. Bruce sends us the following note about their distribution:—"No. 2 (*Enhalus Koenigii*) is recognised by the natives here as the true food of the Dugong; it very seldom crops the leaves of the other (*Thalassia Hemprichii*). Both plants are found only in small patches around the Murray Group, consequently Dugong is scarce; but at the islands to the west of here, where the Dugong is plentiful, both plants are found in profusion."

#### CYPERACEÆ.

*TRICOSTULARIA PAUCIFLORA* Benth. New for New South Wales.

La Perouse (W. Forsyth; November, 1899): Leura, Blue Mountains (A. A. Hamilton; December, 1909).

Previously recorded from Victoria only. The specimens were presented by Mr. A. A. Hamilton, and determined by him.

#### LIPOCARPHA MICROCEPHALA R.Br.

Hawkesbury Agricultural College, Richmond, in a ditch where used to be a swampy tract of country (W. Greenwood, through C. T. Musson; April, 1910).

New for the County of Cumberland. The Rev. Dr. Woolls selected the boundaries of the County of Cumberland as the boundaries of his Census of the "Plants indigenous to the Neighbourhood of Sydney," and this plant is not included in his list.

#### GRAMINEÆ.

##### *PANICUM SEMIALATUM* R.Br., var. *LATIFOLIUM*, n. var.

Duaringa, viâ Rockhampton, Queensland (J. H. Maiden; March, 1909).

A slender grass, 15-18 inches high, apparently annual. Leaves short, flat, above  $\frac{1}{4}$  inch broad at the base and less than 2 inches long, tapering to a point, hirsute and ciliate as well as the long leaf-sheaths and the stems. Stems slender, leafy at the base, with a few short distant leaves higher up. Spikelets in rather distant pairs on the panicle-branches, the second glume smooth and shining.

This slender grass looks very distinct from the robust typical *P. semialatum*, with long narrow leaves and spikelets crowded on the panicle-branches, but it has the chief characters of that species, *i.e.*, the densely fringed second glume, and the cleft palea of the third glume. The absence of the nerves on the second glume is caused by the different texture of the glume; the nerves can be seen also in this variety, if one looks through the glume against the light.

A remarkable form of the typical robust *Panicum semialatum*, with broad marginal wings on the second glume of the spikelets, has been collected by Mr. J. E. Hadley, at Warialda, N.S.W., in April, 1908, but the character is too inconstant for a distinct variety. Normal plants and plants with winged glumes grow side by side in the locality, and in other specimens spikelets with winged glumes and spikelets, or with unwinged glumes are mixed in all proportions. This character is not mentioned by Bentham, in the "Flora Australiensis," and we propose to amend his description so as to include the Warialda form.

Bentham writes (Vol. vii., p.472):—"Glumes . . . . . the 2nd the largest, membranous, 5-nerved, fringed on each side with long pale or dark coloured hairs connected at the base on the intramarginal nerve; 3rd glume . . . . . with a small palea."

To the description of the 2nd glume should be added:—occasionally winged by a horizontally striate wing fully  $\frac{1}{2}$  line broad, and densely ciliate; and in the description of the 3rd glume it should be mentioned that the palea is deeply cleft.

*Panicum semialatum* is also an Asiatic grass, and a form, very closely resembling the Warialda form, is figured by Griffith in his "Icones Plantarum Asiaticarum" (Vol. iii., t.145), under the name *Panicum viaticum*. The second glume in the Asiatic form is broadly winged, as in the Warialda form; the sole difference is that the wing is present only in the lower three-quarters or four-fifths part of the glume, leaving the margins of its upper part bare.

Unfortunately Griffith published no description of his *P. viaticum*, and we have no means of knowing whether he deliberately

separated his species from *P. semialatum*, which was published about 40 years previously, on account of the broad wing on the second glume, or whether R. Brown's grass was unknown to him.

Sir J. D. Hooker mentions the grass in the "Flora of British India," under the name of *Axonopus semialatus*; but, though he quotes *Panicum viaticum* Griff., as a synonym, he describes the margins of the second glume as "villous," and not as winged. In his Key to the genera of Indian grasses, he separates *Axonopus* from *Panicum* on account of the "broadly fimbriate marginal nerves of the second glume and the deeply cleft palea of the third glume," laying special stress on the cleft palea (see Hooker's remark on the genus *Axonopus*, Fl. Br. Ind. vii., p.64).

The small cleft palea is present in all Australian specimens we have examined, but Bentham omits to mention the character.

F. M. Bailey adopts the name *Axonopus semialatus* Hook., in his "Queensland Flora," but also describes the second glume as "fringed on each side," without mentioning winged glumes; it seems that the form with winged glumes has not been observed in Australia, so far, in any other locality except Warialda.

#### FILICES.

*POLYPODIUM CUCULLATUM* Nees et Bl. New for Australia.

Herberton district, Queensland (R. F. Waller; 1908).

This curious little fern has a great range, from Ceylon over the Malayan Archipelago, the Philippines, Samoa, Fiji, New Caledonia, &c., but it has not been previously recorded from Australia. Mr. Waller writes: "found growing on rocks at one place only, on the Dividing Range between Evelyn Scrub and coastal waters."

*POLYPODIUM WALLERI*, sp. nov.

Herberton District, Queensland; at an altitude of about 3,500 feet (R. F. Waller; 1909).

A small tufted epiphytic fern, glabrous except the broad linear-lanceolate pale brown scales at the base of the very short stipes. Fronds 1 to rarely 2 inches long, the largest somewhat above  $\frac{1}{2}$

inch broad, lanceolate in outline, cut down nearly to the rachis into erecto-patent entire or indistinctly lobulate blunt lobes with slightly recurved margins, the lower shortened gradually into the undulately winged short stipes, the upper ones shortened into an undulately lobed blunt point. Veinlets simple or forked, concealed amidst the almost herbaceous texture. Sori orbicular, superficial or very slightly sunk into the tissue, comparatively large, 3 or 4 on the longest lobes, solitary on the short ones.

*Filix parva*, pallide virens, glaber præter squamas lineari-lanceolatas basi stipitis brevissimi. Froudibus lanceolatis 1-2" longis et circiter  $\frac{1}{2}$ " latis, pinnatisectis fere ad rhachem in lobis lineari-obtusis, marginibus leviter recurvatis; lobis inferioribus in rhachi undulate alato contractis, lobis superioribus in apice undulato contractis. Venis simplicibus in textura fere herbacea occultis; soris orbicularibus, superficialiis, 3 v. 4 in lobis brevibus.

This interesting small fern is so closely allied to *Polypodium sarmentosum* Brackr., from the Sandwich Islands, that it may perhaps be looked upon by some as a small form of it, but the union would be rather forced. Besides the great difference in size, the Queensland fern differs from it in the very short stipes, in the more herbaceous texture, in the slightly less deeply cut-down lobes, and in the recurved margins of the lobes. Its position in the Australian flora is next to *P. blechnoides* Hook., and *P. fusco-pilosum* Baker & F.v.M.

ASPLENIUM AMÆNUM Presl. New for Australia.

Evelyn Scrub, near Herberton, N.Q., on rocks (R. F. Waller; October, 1908).

This fern was originally described by C. B. Presl, in the year 1836, in his "Tentamen Pteridographiæ," but it has since been united with *A. unilaterale* Lam., (*A. resectum* Smith, in Hooker & Baker's "Synopsis Filicum"). The Queensland fern is so very distinct from *A. unilaterale*, that we are unable to follow C. Christensen and Alderfelt van Rosenburgh in uniting the two species; but rather follow R. Schlechter, who keeps *A. amœnum* as a distinct species in his "Beiträge zur Kenntniss der

Flora von Neu-Kaledonien," in Engler's Bot. Jahrbücher (Vol. xxxix., p.8, 1907). We have not seen Presl's description of *A. amœnum*; his "Tentamen Pteridographiæ" seems not to be in Sydney, and we must rely on the correctness of Dr. Schlechter's determination. Waller's Queensland specimens are quite identical with Schlechter's New Caledonian ones, and are very distinct from the Australian form of *A. unilaterale* figured and described by Mr. F. M. Bailey from Queensland, as *A. resectum* var. *australiense*.

We give here a short description of *A. amœnum* drawn up from Mr. Waller's Queensland specimens, and Dr. Schlechter's New Caledonian ones:—

A tufted glabrous fern with simply pinnate fronds mostly below one foot high, including the slender stipes, and 2 to 4½ inches broad at the base, gradually narrowed towards the top, mostly bulbiferous near the apex. Pinnæ lanceolate, unequal-sided, the upper side broadly cuneate at the base, the lower side narrowly cuneate and sometimes slightly cut away, bluntly toothed or lobed on both sides, the incisions shallow towards the point of the pinnæ, deeper near the base and cut down on the upper side, nearly or quite to the rhachis in the lowest one or two pairs of pinnæ, leaving thus a single pinnule on the base of the lowest pinnæ of the larger fronds. Texture thinly coriaceous. Veins very oblique, forked. Sori in an irregular line on each side of the midrib, the indusium opening towards the midrib.

ASPLENIUM NORMALE DON. New for Australia.

Evelyn Scrub, near Herberton, N. Queensland; on rocks and dead logs (R. F. Waller; 1909).

A fern with a wide geographical distribution, recorded in van Rosenburgh's "Malayan Ferns from Malacca, Sumatra, Celebes, Philippines, China, North India and Hawaii." The Australian specimens are much smaller than the Indian specimens (figured in Beddome's "Ferns of Southern India" t.cxxxiii.), but they agree well with the smaller forms from the Philippine Islands, though

they are still smaller, the largest Australian specimen seen not exceeding 6 inches.

HYMENOPHYLLUM WALLERI, sp.nov.

Evelyn Scrub, near Herberton, North Queensland (R. F. Waller; November, 1908).

Rhizome filiform, sparingly hairy with somewhat rufous scaly hairs. Stipes slender, very sparingly scaly-hairy or naked when old, not winged or very narrowly so in the uppermost part, about  $\frac{1}{2}$  to  $\frac{3}{4}$  inch long. Fronds dark-green, ovate, about  $1\frac{1}{4}$  inch long and 1 inch broad, sometimes narrower in the sterile fronds, cut down to the narrowly winged rhachis into 5-7 pinnæ on each side. Pinnæ spreading, the lower ones sometimes almost horizontally, ovate to ovate-lanceolate in outline and overlapping each other, pinnately lobed rather above half-way to the midrib, the lobes shallowly lobed again; ultimate lobes short and broad, rounded and with quite entire margins. Sori not numerous, terminal on the upper lobes of the uppermost pinnæ; indusium almost orbicular, about one line long and at least as broad, the valves entire or with slightly uneven margins. Receptacle included.

Rhizoma filiforme; stipes gracilis vix apice alatus, 7-10 mm. longus. Frondes ovatæ circiter  $3\frac{1}{2}$  cm. latæ, pinnatæ 5-7 laciniis utroque latere; laciniis latis, lobis pinnatis et rursus lobatis; lobis ultimis brevibus, latis, rotundatis, margine integro. Sori in lacinulis laciniarum apicalium terminales; indusio orbiculari, circiter 2 mm. longo latoque, margine integro; receptaculo incluso.

The chief characteristic of the new fern is the small frond with a fringe of sori on the top; as far as seen, the sori seem to be strictly confined to the top of the fronds. It is not closely allied to any of the described Australian species but comes very near to *H. paniculiflorum* Pr., figured in Van den Bosch's "Hymenophyllaceæ Javanicæ," t. xxxiv. The chief point of difference between the two ferns is that the indusium is twice as long as broad in the Java fern, and at least as broad as long in our new species; and the fronds are also broader in our fern, and the primary pinnæ are less deeply cut-down.